

REMARKS/ARGUMENTS

This Amendment is filed in response to the Office Action dated May 19, 2008, and within the three month period for reply extending to August 19, 2008.

Claims 10-11, 14, 16, and 20-27 are cancelled.

5 Claims 1-9, 12-13, 15, and 17-19 remain pending.

Drawings

On the Office Action Summary sheet, the Office has again objected to the original as-filed drawings. However, in the body of the Office Action, the Office has not elaborated further on the objection to the drawings. As previously indicated to the Office, 10 the Applicant filed formal drawings on July 19, 2004, in response to the Notice to File Corrected Application Papers. The Applicant's filing of formal drawings on July 19, 2004, is also confirmed by Private Pair. Therefore, the Office is again requested to withdraw the objection to the drawings and acknowledge receipt of the formal drawings filed July 19, 2004.

15 **Rejections under 35 U.S.C. 103**

Claims 1-3, 7, 12, 17, and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al. ("Black" hereafter) (U.S. Patent No. 7,103,602) in view of Col et al. ("Col" hereafter) (U.S. Patent No. 6,330,657), in view of Oka et al. ("Oka" hereafter) (U.S. Patent Application Publication No. 2002/0108042), and further in view 20 of O'Gorman et al. ("O'Gorman" hereafter) (U.S. Patent Application Publication No. 2003/0061548). These rejections are traversed.

With reference to "Examination Guidelines for Determining Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in KSR International Co. v. Teleflex Inc.," Section III.A., the Applicant notes that the Office has effectively asserted 25 that the elements of the prior art (i.e., of the Black, Col, Oka, and O'Gorman references)

can be combined according to known methods to yield predictable results. To reject a claim on this rationale, the Office must articulate the following:

“(1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference;

(2) a finding that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely would have performed the same function as it did separately;

10 (3) a finding that one of ordinary skill in the art would have recognized that the results of the combination were predictable; and

(4) whatever additional findings based on the *Graham* factual inquiries may be necessary, in view of the facts of the case under consideration, to explain a conclusion of obviousness.”

15 If any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. For reasons discussed below, the Applicant submits that the combined cited prior art does not include each element as recited in claim 1. Therefore, the Applicant submits that the Office’s articulation of “(1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference,” is in error. Moreover, the Applicant submits that the Office’s articulation of “(2) a finding that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely would have performed the same function as it did separately,” is in error.

Determination of whether the prior art includes each element claimed requires findings of fact concerning the teachings of the references applied. Therefore, the Applicant will now factually indicate how the cited prior art fails to teach the various elements of claim 1, in contrast to the Office's assertion.

- 5 In applying the combination of Black, Col, Oka, and O'Gorman to reject claim 1, the Office has asserted that Col (column 14, lines 1-20) teaches the first execution unit defined to communicate a partial result of the schedule computation on the data block through its output to the input of the second execution unit when the partial result becomes available and prior to completion of the schedule computation on the data block.
- 10 Col (column 14, lines 1-20) describes the structure and operation of the "Paired Instructions Microprocessor Pipeline Stages" 400, as shown in Figure 4 of Col. Beyond simply citing Col (column 14, lines 1-20), the Office has provided no indication whatsoever as to which specific features of Col are asserted to teach the first and second execution units of claim 1 and their associated functions as recited in claim 1. Therefore,
- 15 the Applicant must comprehensively evaluate the teachings of Col (column 14, lines 1-20, and Figure 4).

Col (column 14, lines 7-9) states that two parallel micro instructions are distributed as shown (in Figure 4) between the four execute stages 412-418. Col (column 14, lines 9-12) states that one of the micro instructions is routed to each of the integer execute stage 412, the floating point execute stage 414, and the first SIMD execute stage 416, via bus 422. Col (column 14, lines 12-14) also states that the other micro instructions is routed to the integer execute stage 412, and to the second SIMD execute stage 418, via bus 424. Additionally, Col (Figure 4) shows that a respective output of each of the integer execute stage 412, the floating point execute stage 414, the SIMD

execute stage 416, and the SIMD execute stage 418 is ONLY connected to the store stage 420.

Based on the above-mentioned teachings of Col (column 14, lines 1-20, and Figure 4), it should be understood that neither of the integer execute stage 412, the 5 floating point execute stage 414, the first SIMD execute stage 416, nor the second SIMD execute stage 418 is defined to communicate a partial result of a schedule computation on a data block through its output to the input of another of the integer execute stage 412, the floating point execute stage 414, the first SIMD execute stage 416, or the second SIMD execute stage 418. Specifically, the input of each of the execute stages 412, 414, 416, and 10 418 comes only from the load stage 410. Additionally, the output of each of the execute stages 412, 414, 416, and 418 goes only to the store stage 420. Therefore, the facts indicate that the execute stages 412, 414, 416, and 418 of Col are connected in a PARALLEL manner with respect to each other, and cannot be reasonably construed to collectively teach a first execution unit defined to communicate a partial result to a 15 second execution unit, as recited in claim 1.

Moreover, it is a fact that Col (column 14, lines 1-20) does not teach that either of the execute stages 412, 414, 416, and 418 is defined to perform either a schedule computation on a data block or a compression function, as required by the first and second execution units of claim 1, respectively. Additionally, it is a fact that Col (column 20 14, lines 1-20) does not teach that either of the execute stages 412, 414, 416, and 418 is defined to communicate a partial result of a schedule computation on a data block when the partial result becomes available and prior to completion of the schedule computation on the data block.

In view of the foregoing, the Applicant submits that the Office has erred in 25 asserting that Col (column 14, lines 1-20, and Figure 4) teaches a first execution unit

defined to communicate a partial result of a schedule computation on a data block through its output to an input of a second execution unit, when the partial result becomes available, and prior to completion of the schedule computation on the data block, as recited in claim 1. Also, beyond merely citing Col (column 14, lines 1-20), the Applicant 5 submits that the Office has failed to articulate how Col teaches each of the following elements/features of claim 1:

- 1) a first execution unit
- 2) ... defined to communicate a partial result
- 3) ... of a schedule computation on a data block
- 10 4) ... through its output
- 5) ... to an input of a second execution unit
- 6) ... when the partial result becomes available
- 7) ... and prior to completion of the schedule computation on the data block.

The Applicant further notes that the Office has not cited any reference other than 15 Col as teaching the above-mentioned features of claim 1. Therefore, the Applicant submits that the Office's articulation of "(1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference," is in error.

20 In addition to the foregoing, in applying the combination of Black, Col, Oka, and O'Gorman to reject claim 1, the Office has asserted that O'Gorman (paragraph [0024]) teaches that the output of the first execution unit is connected to the input of the second execution unit. As discussed above, the Office has relied upon Col to teach the first and second execution units of claim 1. Therefore, the Office is relying upon O'Gorman to 25 teach a modification of Col. More specifically, the Office is relying upon O'Gorman to

teach a modification of the execute stages 412, 414, 416, and 418 of Col, such that the output of one of Col's execute stages (412, 414, 416, and 418) is connected to the input of another of Col's execute stages (412, 414, 416, and 418).

Col (column 14, lines 1-20, and Figure 4) explicitly teaches that one micro instruction is routed to each of execute stages 412, 414, and 416, and that another micro instruction is routed in parallel to execute stages 412 and 418, and that the outputs of all execute stages 412, 414, 416, and 418 are routed to a store stage 420. It should be understood that if either of the outputs of execute stages 412, 414, 416, and 418 were routed to the input of another of the execute stages 412, 414, 416, and 418, the principle of operation of the microprocessor 400 of Col would be changed, and the microprocessor 400 of Col would be rendered unsatisfactory for its intended purpose.

If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Thus, there is no suggestion or motivation to modify Col such that either of the outputs of execute stages 412, 414, 416, and 418 is routed to the input of another of the execute stages 412, 414, 416, and 418. Also, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). Therefore, because the microprocessor 400 of Col would be rendered unsatisfactory for its intended purpose if it were modified based on the teachings of O'Gorman so as to have an output of either of execute stages 412, 414, 416, and 418 routed to the input of another of the execute stages 412, 414, 416, and 418, the combined teachings of Black, Col, Oka, and O'Gorman are not sufficient to render claim 1 *prima facie* obvious under 35 U.S.C. 103.

In addition to the foregoing, in applying the combination of Black, Col, Oka, and O’Gorman to reject claim 1, the Office has asserted that Oka (paragraph [0153]) teaches a second execution unit defined to perform a compression function on a partial result received from a first execution unit. However, the Applicant finds no such teaching in paragraph [0153] of Oka. While Oka (paragraph [0153]) teaches that "... each selected signature module generates a signature based on the applicable signature algorithm (e.g., RSA, ECC) ..." the Applicant submits that generation of a signature is not equivalent to, nor related to, performing a compression function. Therefore, the Applicant submits that Oka (paragraph [0153]) does not teach a second execution unit defined to perform a compression function on a partial result received from a first execution unit, as recited in claim 1. Moreover, the Office has not provided any explanation that would illuminate how the teachings of Oka (paragraph [0153]) are related to a second execution unit defined to perform a compression function on a partial result received from a first execution unit, as recited in claim 1.

The Applicant further notes that the Office has not cited any reference other than Oka as teaching the above-mentioned features of claim 1. Therefore, the Applicant submits that the Office’s articulation of “(1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference,” is in error.

In addition to the foregoing, in applying the combination of Black, Col, Oka, and O’Gorman to reject claim 1, the Office has asserted that Black (column 2, lines 14-30) teaches a processor capable of executing a secure hash algorithm (SHA). However, the Applicant would like to clarify that Black teaches "... a de-duplicate processor for calculating a SHA value of the received data files ..." The Applicant respectfully points

out that Black does not teach a processor for executing a SHA computation on a message, as recited in claim 1. Rather, Black teaches a processor for calculating a SHA value of received data files. Additionally, the combination of Black, Col, Oka, and O'Gorman does not teach or suggest that the "data files" of Black can represent a "message."

5 Therefore, the Applicant submits that the Office's articulation of "(1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference," is in error.

In addition to the foregoing, claim 1 recites that "the first execution unit is defined 10 to perform a schedule computation on a data block of the message." In applying the combination of Black, Col, Oka, and O'Gorman to reject claim 1, the Office has failed to specifically indicate which reference is asserted to teach: "the first execution unit is defined to perform a schedule computation on a data block of the message." The Office has implicitly and tangentially asserted that Col teaches a first execution unit defined to 15 perform a schedule computation on a data block of a message. However, the Office has failed to specifically identify a particular feature of Col that is asserted to teach the first execution unit as recited in claim 1. Therefore, the Applicant submits that the Office's articulation of "(1) a finding that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the 20 claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference," is in error.

Moreover, to reject claim 1 on the rationale that the elements of the prior art (i.e., of the Black, Col, Oka, and O'Gorman references) can be combined according to known methods to yield predictable results, the Office is required to provide "(2) a finding that 25 one of ordinary skill in the art could have combined the elements as claimed by known

methods, and that in combination, each element merely would have performed the same function as it did separately.” As discussed above, none of the execute stages 412, 414, 416, and 418 of Col is defined to communicate a partial result of a schedule computation on a data block through its output to the input of another of the execute stages 412, 414, 416, and 418 of Col when the partial result becomes available and prior to completion of the schedule computation on the data block. Therefore, even if selected execute stages 412, 414, 416, and 418 of Col were combined with the features of Black, Oka, and O’Gorman, as asserted by the Office, the selected execute stages 412, 414, 416, and 418 of Col would not have merely performed the same function as they did separately.

10 Consequently, the Applicant submits that the Office’s articulation of “(2) a finding that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely would have performed the same function as it did separately,” is in error.

If any of the above-identified findings (1)-(4) cannot be made, then the rationale 15 that the elements of the prior art can be combined according to known methods to yield predictable results cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. As discussed above, the Office’s articulation of findings (1) and (2) is unclear and in error. Moreover, the Applicant submits that findings (1) and (2) cannot be made based on the cited art of record. The analysis supporting a 20 rejection under 35 U.S.C. 103 should be made explicit. Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), and *KSR*, 550 U.S. at _____, 82 USPQ2d at 1396. Therefore, the Applicant submits that 25 claim 1 is not rendered *prima facie* obvious under 35 U.S.C. 103 by the combination of

Black, Col, Oka, and O'Gorman. Therefore, the Office is requested to withdraw the rejection of claim 1 under 35 U.S.C. 103.

Each of independent claims 7, 12, and 17 recites features similar to those argued above with regard to claim 1, and have been rejected on the same basis as claim 1.

5 Therefore, the Applicant submits that the arguments presented above with regard to claim 1 are equally applicable to each of claims 7, 12, and 17. Therefore, the Applicant submits that each of claims 7, 12, and 17 is not rendered *prima facie* obvious by the combination of Black, Col, Oka, and O'Gorman. Therefore, the Office is requested to withdraw the rejections of claims 7, 12, and 17 under 35 U.S.C. 103.

10 Because a dependent claim incorporates each and every feature of its independent claim, the dependent claim is patentable for at least the same reasons provided for its independent claim. Therefore, each of dependent claims 2-3 and 19 is patentable for at least the same reasons as its independent claim. Therefore, the Applicant requests the Office to withdraw the rejections of claims 2-3 and 19, under 35 U.S.C. 103.

15 Claims 4, 5, 8, and 13 were rejected under 35 U.S.C. 103(a) as being unpatentable over Black, Col, Oka, and O'Gorman in view of Lilly (U.S. Patent No. 6,829,355). These rejections are traversed.

Because a dependent claim incorporates each and every feature of its independent claim, the dependent claim is patentable for at least the reasons provided for its independent claim. Therefore, each of dependent claims 4, 5, 8, and 13 is patentable for at least the same reasons as its independent claim. Thus, the Applicant requests the Office to withdraw the rejections of claims 4, 5, 8, and 13, under 35 U.S.C. 103.

20 Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Black, Col, Oka, and O'Gorman in view of Tague et al. ("Tague" hereafter) (U.S. Patent No. 4,799,181). This rejection is traversed.

Because a dependent claim incorporates each and every feature of its independent claim, the dependent claim is patentable for at least the reasons provided for its independent claim. Therefore, dependent claim 6 is patentable for at least the same reasons as independent claim 1. Thus, the Applicant requests the Office to withdraw the 5 rejection of claim 6, under 35 U.S.C. 103.

Claims 9, 15, and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Black, Col, Oka, O'Gorman, and Lilly, in view of Gibson (U.S. Patent No. 5,155,820). These rejections are traversed.

Because a dependent claim incorporates each and every feature of its independent 10 claim, the dependent claim is patentable for at least the reasons provided for its independent claim. Therefore, each of dependent claims 9, 15, and 18 is patentable for at least the same reasons as its independent claim. Thus, the Applicant requests the Office to withdraw the rejections of claims 9, 15, and 18, under 35 U.S.C. 103.

The Applicant submits that all of the pending claims are in condition for 15 allowance. Therefore, a Notice of Allowance is requested. If the Examiner has any questions concerning the present Amendment, the Examiner is requested to contact the undersigned at (408) 774-6914. If any additional fees are due in connection with filing this Amendment, the Commissioner is also authorized to charge Deposit Account No. 50-0805 (Order No. SUNMP501). A duplicate copy of the transmittal is enclosed for this 20 purpose.

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